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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY/DOCKET NO.	CONFIRMATION NO.
10/073,132	02/13/2002	Shuji Yoshida	107346-00020	6389
7590	11/19/2003			EXAMINER
ARENT FOX KINTNER PLOTKIN & KAHN, PLLC Suite 600 1050 Connecticut Avenue, N.W. Washington, DC 20036-5339			TRAN, ANH Q	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application N .</b>	<b>Applicant(s)</b>
	10/073,132	YOSHIDA ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Anh Q. Tran	2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 February 2002.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 2 is/are allowed.
- 6) Claim(s) 1 and 3-16 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 February 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    5) Notice of Informal Patent Application (PTO-152)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                    6) Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-4 and 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites that the second input is controlling the transistor connected to the power supply while the figures in the application clearly indicated the first input is controlling the transistor connected to the power supply. The limitation recites in the claims is confusing. Clarification is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Montrone et al (4,707,800).

Claim 1, Montrone shows a binary carry logic circuit (Fig. 2) receiving an input bit (Z) and a carry-in bit (C<sub>cin</sub>) to generate a carry-out bit (C<sub>cout</sub>), comprising:  
A transfer gate (17), having a data input (C<sub>cin</sub>) and a data output (C<sub>out</sub>), turned on when the input bit is active (Z=0), the data input receiving the carry-in bit; and

A transistor (P1), having a current channel connected between a power supply potential (+) and the data output, a logic value of the power supply potential being equal to that of the carry-in bit in an inactive state, turned on when the input bit being inactive ( $Z=1$ ,  $A/S=1$ ).

The limitations of claim 9 are rejected above claim by replacing a carry-in bit and a carry-out bit with a borrow-in bit and a borrow-out bit.

3. Claims 5-6, 10 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Licciardi et al (4,905,179).

Claim 10, Licciardi shows a circuit (CEL 1, Fig. 2) receiving first (A, B) and second input ( $C_{in}$ ) to generate first (S) and second out bits ( $C_{out}$ ), comprising:  
A transfer gate (T1, T2), having a data input ( $C_{cin}$ ) and a data output ( $C_{out}$ ), turned on when the first input bit is active ( $A \neq B$ ), the data input receiving the carry-in bit; and

A transistor (T3, T4), having a current channel connected between a power supply potential (VCC) and the data output, a logic value of the power supply potential being equal to that of the carry-in bit in an inactive state, turned on when the input bit being inactive ( $A=B=0$ ); and

A logic circuit (EX1), generating the first output bit which is active when either the first or second input bit is active;

Wherein the second output bit is on the data output.

The limitations of claim 5 are rejected as above claim 10; Furthermore, Licciardi shows the circuits being connected in cascade (e.g., CEL1 to CEL 2 and so forth) and a logic circuit (EX1), generating the output bit which is active when either the input bit (A, B) or the carry-in bit is active (Cin).

Claims 6 and 14, Licciardi shows the circuit for the least significant digit (CEL1) comprises an NAND gate (T3-T6 make-up NAND gate) generating a carry-out (Cout) bit.

The limitations of claims 13 are rejected as above claim 10, replacing a carry-in bit and a carry-out bit with a borrow-in bit and a borrow-out bit; Furthermore, Licciardi shows the circuits being connected in cascade (CEL1 to CEL 2 and so forth).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-8, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Licciardi et al (4,905,179).

Licciardi discloses the claimed invention except for an inverter connected to the output of the most significant digit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an inverter connected to the

Art Unit: 2819

output of the most significant digit since it was known in the art that an inverter provide inverse or modify signal.

***Allowable Subject Matter***

6. Claim 2 is allowed.
7. The following is an examiner's statement of reasons for allowance: with respect to claim 2, in addition to other limitations in the claim, the prior art fails to teach or disclose the applicant's invention as claimed, particularly the feature describing a logic circuit, generating the first output bit which is active when either the first or second input bit is active; wherein the second output bit is on the data output.
8. Claims 3-4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

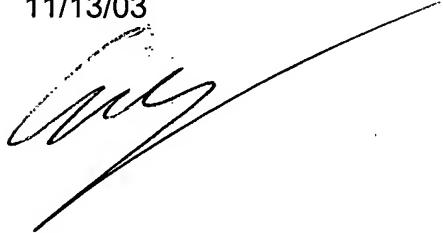
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Q. Tran whose telephone number is 703-306-4507. The examiner can normally be reached on M-TH (7:00-5:30) Friday off.

Art Unit: 2819

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 703-305-3493. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Anh Tran  
11/13/03

A handwritten signature in black ink, appearing to read "Anh Tran".